ABSTRACT

LOOKUP ENGINE

A look up engine 200 comprising a storage means 212a, 212b for storing a plurality of entries, each entry comprising a value and an associated key value, such that, in operation, a look up is carried out by outputing a value which is associated with the stored key value which matches an input key value. The look up engine 200 comprises a plurality of look up state machines 206a, 206b, 206c, 206d connected in parallel to enable multiple look ups to be carried out concurrently. Each entry comprises an associated skip value, if the skipped bits of the input key value and the associated skip value mismatches, an error message is output to indicate lookup failure. The entries may be stored in a trie format which is constructed by identifying overlapping ranges between the plurality of entries; splitting the identified overlapping ranges; storing the plurality of entries within a trie structure.